

=> FILE REG

FILE 'REGISTRY' ENTERED AT 19:33:14 ON 16 DEC 2008
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=> DISPLAY HISTORY FULL L1-

FILE 'REGISTRY' ENTERED AT 19:13:35 ON 16 DEC 2008

E SULFURIC ACID/CN
L1 1 SEA "SULFURIC ACID"/CN
E SULFUR DIOXIDE/CN
L2 1 SEA "SULFUR DIOXIDE"/CN
E OXYGEN/CN
L3 1 SEA OXYGEN/CN
E SULFUR TRIOXIDE/CN
L4 1 SEA "SULFUR TRIOXIDE"/CN

FILE 'HCA' ENTERED AT 19:20:59 ON 16 DEC 2008

L5 12490 SEA L1/P
L6 10959 SEA L2 (L) RACT/RL
L7 63736 SEA L3 (L) RACT/RL
L8 43002 SEA L4 OR (SULFUR# OR SULPHUR# OR SULFER# OR SULPHER#) (W)
TRIOXIDE# OR SO3
L9 77860 SEA UPSTREAM?
L10 1357 SEA CONTACT? (2A) (STAGE# OR STAGING#)
L11 7891 SEA (MAIN# OR PRIMAR? OR PRINCIPAL?) (2A) (CONTACT? OR
STAGE# OR STAGING#)
L12 1310206 SEA ABSORB? OR ABSORP?
L13 25186 SEA (GAS## OR GASEOUS? OR GASIF?) (2A) (FED OR FEED?) OR
FEEDGAS?
L14 170 SEA PRECONTACT? OR PRE(W)CONTACT?
L15 1388 SEA DAUM ?/AU
L16 3953 SEA SEITZ ?/AU
L17 94065 SEA MULLER ?/AU OR MUELLER ?/AU
L18 68 SEA ANASTASIJEVIC ?/AU
L19 1 SEA L15 AND L16 AND L17 AND L18
L20 2962 SEA CONTACT? (2A) STEP?
L21 5881 SEA (MAIN# OR PRIMAR? OR PRINCIPAL?) (2A) STEP?
L22 35 SEA L5 AND L6 AND L7
L23 25 SEA L22 AND ((L8 OR L9 OR L10 OR L11 OR L12 OR L13) OR
L14 OR L20 OR L21)
SET ROLES TEXT
L24 10 SEA L22 NOT L23
L25 16 SEA 1808-2002/PY,PRY,AY AND L23

L26

7 SEA 1808-2002/PY,PRY,AY AND L24

=> FILE HCA

FILE 'HCA' ENTERED AT 19:33:31 ON 16 DEC 2008

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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=> D L25 1-16 BIB ABS HITSTR HITIND

L25 ANSWER 1 OF 16 HCA COPYRIGHT 2008 ACS on STN

AN 140:359745 HCA Full-text

TI Procedure and device for the production of sulfuric acid from sulfur dioxide-rich gases

IN Daum, Karl-Heinz; Mueller, Hermann; Seitz, Ekkehard; Anastasijevic, Nikola

PA Outokumpu Oyj, Finland

SO Ger. Offen., 26 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

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	WO 2004037719	A1	20040506	WO 2003-EP11659	200310 21
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US	20060245997	A1	20061102	US	2005-532326
					20050422
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PRAI DE	2002-10249782	A	20021024	<--	

WO 2003-EP11659 W 20031021

AB H₂SO₄ is produced by (1) catalytic oxidn. of SO₂ with O₂ in >2 successively connected contact steps to give SO₃, and (2) absorption of the resulting SO₃ in an absorber. A partial flow contg. SO₂ and SO₃ is discharged from the last contact step followed by mixing the flow with a waste gas to obtain a contact gas contg. >13% SO₂ that is recycled into the first contact step.

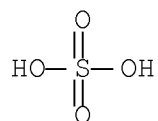
IT 7664-93-9P, Sulfuric acid, preparation

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(procedure and plant for prodn. of sulfuric acid from sulfur dioxide-rich gases)

RN 7664-93-9 HCA

CN Sulfuric acid (CA INDEX NAME)



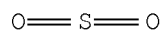
IT 7446-09-5, Sulfur dioxide, reactions 7782-44-7, Oxygen, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(procedure and plant for prodn. of sulfuric acid from sulfur dioxide-rich gases)

RN 7446-09-5 HCA

CN Sulfur dioxide (CA INDEX NAME)



RN 7782-44-7 HCA

CN Oxygen (CA INDEX NAME)



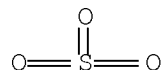
IT 7446-11-9P, Sulfur trioxide, preparation

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(procedure and plant for prodn. of sulfuric acid from sulfur dioxide-rich gases)

RN 7446-11-9 HCA

CN Sulfur trioxide (CA INDEX NAME)



IC ICM C01B017-765

CC 49-2 (Industrial Inorganic Chemicals)

ST sulfuric acid prodn sulfur trioxide

absorption; sulfur dioxide catalytic oxidn oxygen

IT Oxidation

(catalytic; of sulfur dioxide in contact step
, for prodn. of sulfuric acid by)

IT Absorption

(of sulfur trioxide, for prodn. of sulfuric
acid from sulfur dioxide-rich gases)

IT 7664-93-9P, Sulfuric acid, preparation

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP
(Preparation)

(procedure and plant for prodn. of sulfuric acid from sulfur
dioxide-rich gases)

IT 7446-09-5, Sulfur dioxide, reactions 7782-44-7,
Oxygen, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(procedure and plant for prodn. of sulfuric acid from sulfur
dioxide-rich gases)

IT 7446-11-9P, Sulfur trioxide, preparation

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation);
RACT (Reactant or reagent)

(procedure and plant for prodn. of sulfuric acid from sulfur
dioxide-rich gases)

L25 ANSWER 2 OF 16 HCA COPYRIGHT 2008 ACS on STN

AN 138:257330 HCA Full-text

TI Manufacture of oleum and sulfuric acid by low-temperature spray
combustion of sulfur

IN Eichenhofer, Kurt-Wilhelm; Grabowski, Klaus-Peter; Draeger, Guenter;
Kuerten, Martin; Schweitzer, Martin

PA Bayer AG, Germany

SO Ger. Offen., 12 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	DE 10143176	A1	20030320	DE 2001-10143176	20010904
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	EP 1295849	A2	20030326	EP 2002-18250	20020822
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	EP 1295849	A3	20031126		
	EP 1295849	B1	20060712		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
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				<--	
	JP 2003089509	A	20030328	JP 2002-250364	20020829
				<--	
	US 20030077217	A1	20030424	US 2002-230835	20020829
				<--	
	US 6893622	B2	20050517		
	CA 2401263	A1	20030304	CA 2002-2401263	20020903

PRAI DE 2001-10143176 A 20010904 <--

AB Oleum having a SO₃ concn. of 10-45 wt.% and 94-100 wt.% H₂SO₄ are produced by (1) hyper-stoichiometric combustion of S with atm. O₂, (2) cooling the resulting SO₂-contg. gases at 350°-500°, (3) catalytic conversion the cooled SO₂-contg. gases to SO₃-contg. gases in the presence of a V catalyst by single- or double-contact catalysis, (4) absorbing the SO₃-contg. gases after cooling, and (5) sepn. of liqs. and energy recovery. The liq. S is sprayed vertically in the hot combustion flow by using bimodal fan nozzles. The

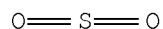
disclosed method reduces the NOHSO4 content and the serviceability costs caused by corrosion, and can be carrying out without (H2NNH2)2.H2SO4 soln.

IT 7446-09-5P, Sulfur dioxide, preparation

RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); RCT (Reactant); PREP (Preparation); PROC (Process); **RACT (Reactant or reagent)**
(for low-temp. combustion of sulfur for prodn. of oleum and sulfuric acid)

RN 7446-09-5 HCA

CN Sulfur dioxide (CA INDEX NAME)



IT 7782-44-7, Oxygen, reactions

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); **RACT (Reactant or reagent)**

(for low-temp. combustion of sulfur for prodn. of oleum and sulfuric acid)

RN 7782-44-7 HCA

CN Oxygen (CA INDEX NAME)



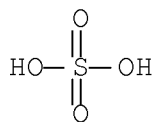
IT 7664-93-9P, Sulfuric acid, preparation

RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)

(manuf. of oleum and sulfuric acid by low-temp. spray combustion of sulfur)

RN 7664-93-9 HCA

CN Sulfuric acid (CA INDEX NAME)



IC ICM C01B017-69
 CC 49-2 (Industrial Inorganic Chemicals)
 IT 124-38-9P, Carbon dioxide, preparation 630-08-0P, Carbon monoxide,
 preparation 7446-09-5P, Sulfur dioxide, preparation
 7727-37-9P, Nitrogen, preparation 11104-93-1P, NOx, preparation
 RL: CPS (Chemical process); IMF (Industrial manufacture); PEP
 (Physical, engineering or chemical process); RCT (Reactant); PREP
 (Preparation); PROC (Process); **RACT (Reactant or reagent)**
 (for low-temp. combustion of sulfur for prodn. of oleum and
 sulfuric acid)
 IT 7782-44-7, Oxygen, reactions
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical
 process); RCT (Reactant); PROC (Process); **RACT (Reactant or
 reagent)**
 (for low-temp. combustion of sulfur for prodn. of oleum and
 sulfuric acid)
 IT 7664-93-9P, Sulfuric acid, preparation 8014-95-7P, Oleum
 RL: CPS (Chemical process); IMF (Industrial manufacture); PEP
 (Physical, engineering or chemical process); PREP (Preparation);
 PROC (Process)
 (manuf. of oleum and sulfuric acid by low-temp. spray combustion
 of sulfur)

L25 ANSWER 3 OF 16 HCA COPYRIGHT 2008 ACS on STN
 AN 138:240027 HCA Full-text
 TI Process and plant for the conversion of SO2 into sulfuric acid
 IN Fattinger, Volker; Jaeger, Walter
 PA Fattinger Air Pollution Control AG, Switz.
 SO S. African, 21 pp.
 CODEN: SFXXAB
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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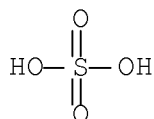
PI	ZA 9906661	A	20000515	ZA 1999-6661	199910 22

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PRAI CH 1998-2147 A 19981023 <--
 AB To lower the manuf. cost and recover the discharge gases, a process
 combining a contact plant (KA) and a nitric oxide sulfuric acid plant
 (SSA) is provided for manuf. of highly concd. sulfuric acid by
 conversion of SO2. Water in the **feed gases** and/or process air of the
 KA is **absorbed** with < 72% H2SO4 from the SSA, then, the water

absorbed < 65% H₂SO₄ is transferred to a SO₂ absorption stage of the SSA. The dried discharge gas contg. SO₂ and NO_x from the KA is fed into the SSA for the recovery of concd. H₂SO₄. The discharge gases contain (SO₂ and NO_x) <= 20 ppm.

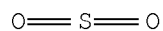
IT 7664-93-9P, Sulphuric acid, preparation
RL: PNU (Preparation, unclassified); PREP (Preparation)
(process and plant for manuf. of concd. sulfuric acid)
RN 7664-93-9 HCA
CN Sulfuric acid (CA INDEX NAME)



IT 7782-44-7, Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for manuf. of concd. sulfuric acid)
RN 7782-44-7 HCA
CN Oxygen (CA INDEX NAME)



IT 7446-09-5, Sulfur dioxide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for manuf. of concd. sulfuric acid)
RN 7446-09-5 HCA
CN Sulfur dioxide (CA INDEX NAME)



IC ICM B01D
ICS C01B
CC 49-2 (Industrial Inorganic Chemicals)
ST sulfuric acid oleum sulfur oxide conversion; water
absorption acid exchange discharge gas recovery
IT 11104-93-1, Nitrogen oxide, processes
RL: REM (Removal or disposal); PROC (Process)

(in feed gas for manuf. of concd. sulfuric acid)

IT 7732-18-5, Water, processes

RL: REM (Removal or disposal); PROC (Process)

(in feed gas removed for manuf. of concd. sulfuric acid)

IT 7664-93-9P, Sulphuric acid, preparation 8014-95-7P, Oleum

RL: PNU (Preparation, unclassified); PREP (Preparation)

(process and plant for manuf. of concd. sulfuric acid)

IT 7782-44-7, Oxygen, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactant for manuf. of concd. sulfuric acid)

IT 7446-09-5, Sulfur dioxide, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(reactant for manuf. of concd. sulfuric acid)

L25 ANSWER 4 OF 16 HCA COPYRIGHT 2008 ACS on STN

AN 134:369018 HCA Full-text

TI Method for preparing sulfur trioxide, sulfuric acid, and oleum from sulfur dioxide

IN Menon, Adam V.

PA Monsanto Company, USA

SO PCT Int. Appl., 67 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	WO 2001036324	A1	20010525	WO 2000-US30095
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200011
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CA 2387988	A1	20010525	CA 2000-2387988
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ZA 2002002425 A 20030626 ZA 2002-2425 200203
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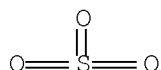
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PRAI US 1999-163061P      P      19991101  <--
WO 2000-US30095          W      20001101  <--
OS  MARPAT 134:369018
AB  A converted feed gas comprising a first portion of the SO2-enriched
    stripper gas is formed. A conversion gas comprising SO3 and residual
    SO2 is formed by passing the converted feed gas through a plurality
    of catalyst beds in series, the plurality comprising at least 2 and
    no greater than 4 catalyst beds. A second portion of the SO2-
    enriched gas is introduced into at least one catalyst bed which is
    downstream of the most upstream catalyst bed in the plurality to
    fortify the SO2 concn. in the gas fed to the downstream bed. The
    present invention is also directed to a process for making sulfuric
    acid and/or oleum from a source gas comprising SO2. A conversion gas
    comprising SO3 and residual SO2 is formed by passing the SO2-enriched
    stripper gas through a plurality of catalyst beds in series. The
    conversion gas is combined with water vapor to form an acid product
    gas comprising: (a) sulfuric acid formed by a gas phase reaction
    between SO3 from the conversion gas and water vapor, thereby
    generating the heat of formation of sulfuric acid in the gas phase;
    (b) SO3; and (c) SO2. Heat energy from the gas phase heat of
    formation of sulfuric acid is recovered by transfer of heat from the
    acid product gas to steam or feed water in an indirect heat
    exchanger. The cooled acid product gas is then contacted with liq.

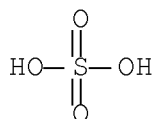
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sulfuric acid in an SO₃ absorption zone to form addnl. sulfuric acid and/or oleum and an SO₃-depleted gas comprising SO₂.

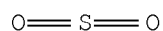
IT 7446-11-9P, Sulfur trioxide, preparation
7664-93-9P, Sulfuric acid, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(method for prepg. sulfur trioxide, sulfuric acid, and oleum from sulfur dioxide)
RN 7446-11-9 HCA
CN Sulfur trioxide (CA INDEX NAME)



RN 7664-93-9 HCA
CN Sulfuric acid (CA INDEX NAME)



IT 7446-09-5, Sulfur dioxide, reactions 7782-44-7, Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(method for prepg. sulfur trioxide, sulfuric acid, and oleum from sulfur dioxide)
RN 7446-09-5 HCA
CN Sulfur dioxide (CA INDEX NAME)



RN 7782-44-7 HCA
CN Oxygen (CA INDEX NAME)

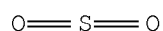


IC ICM C01B017-765
 CC 49-2 (Industrial Inorganic Chemicals)
 Section cross-reference(s): 48
 ST **sulfur trioxide** sulfuric acid oleum prepn sulfur
 dioxide
 IT Catalysts
 Formation enthalpy
 Heat exchangers
 Heat transfer
 Oxidation catalysts
 (method for prepg. **sulfur trioxide**, sulfuric
 acid, and oleum from sulfur dioxide)
 IT Heat
 (recovery; method for prepg. **sulfur trioxide**,
 sulfuric acid, and oleum from sulfur dioxide)
 IT 1314-62-1, Vanadium pentoxide, uses
 RL: CAT (Catalyst use); USES (Uses)
 (K-promoted; method for prepg. **sulfur trioxide**
 , sulfuric acid, and oleum from sulfur dioxide)
 IT 7440-09-7, Potassium, uses
 RL: CAT (Catalyst use); USES (Uses)
 (V205 promoted with; method for prepg. **sulfur**
trioxide, sulfuric acid, and oleum from sulfur dioxide)
 IT 7446-11-9P, **Sulfur trioxide**, preparation
 7664-93-9P, Sulfuric acid, preparation 8014-95-7P, Oleum
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (method for prepg. **sulfur trioxide**, sulfuric
 acid, and oleum from sulfur dioxide)
 IT 7446-09-5, Sulfur dioxide, reactions 7704-34-9, Sulfur,
 reactions 7782-44-7, Oxygen, reactions
 RL: RCT (Reactant); **RAC**T (Reactant or reagent)
 (method for prepg. **sulfur trioxide**, sulfuric
 acid, and oleum from sulfur dioxide)
 IT 78-46-6, Dibutyl butyl phosphonate 4353-28-0, Tetraethylene glycol
 diethyl ether
 RL: TEM (Technical or engineered material use); USES (Uses)
 (method for prepg. **sulfur trioxide**, sulfuric
 acid, and oleum from sulfur dioxide)
 IT 7631-86-9, Silica, uses
 RL: CAT (Catalyst use); TEM (Technical or engineered material use);
 USES (Uses)
 (support; method for prepg. **sulfur trioxide**,
 sulfuric acid, and oleum from sulfur dioxide)
 RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

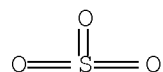
AN 133:82778 HCA Full-text
 TI In situ chemical generator and method for using it to fabricate
 semiconductor devices
 IN Bar-Gadda, Ronny
 PA Ronal Systems Corporation, USA
 SO PCT Int. Appl., 25 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2000040776	A1	20000713	WO 2000-US231	200001 04
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W: JP, KR, SG				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6579805	B1	20030617	US 1999-225922	199901 05
<--				
TW 439105	B	20010607	TW 2000-89100067	200001 04
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EP 1155164	A1	20011121	EP 2000-902332	200001 04
<--				
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
JP 2002534787	T	20021015	JP 2000-592468	200001 04
<--				
KR 755122	B1	20070904	KR 2001-708564	200107 05
<--				
US 20030170153	A1	20030911	US 2003-336483	200301 03
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US 6800559	B2	20041005		

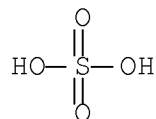
PRAI US 1999-225922 A 19990105 <--
 WO 2000-US231 W 20000104 <--
 AB Chem. generator and method for generating a chem. species at a point
 of use such as the chamber of a reactor in which a workpiece such as
 a semiconductor wafer is to be processed. The species is generated
 by creating free radicals, and combining the free radicals to form
 the chem. species at the point of use.
 IT 7446-09-5, Sulfur dioxide, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (SO₃ formation from SO₂)
 RN 7446-09-5 HCA
 CN Sulfur dioxide (CA INDEX NAME)



IT 7446-11-9P, Sulfur oxide (SO₃), preparation
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (SO₃ formation from SO₂)
 RN 7446-11-9 HCA
 CN Sulfur trioxide (CA INDEX NAME)



IT 7664-93-9P, Sulfuric acid, preparation
 RL: SPN (Synthetic preparation); PREP (Preparation)
 (chem. generation of)
 RN 7664-93-9 HCA
 CN Sulfuric acid (CA INDEX NAME)



IT 7782-44-7, Oxygen, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (formation of nitric oxide from)

RN 7782-44-7 HCA
CN Oxygen (CA INDEX NAME)

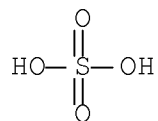
O=O

IC ICM C23F001-02
ICS H01L021-3065
CC 76-3 (Electric Phenomena)
Section cross-reference(s): 48
IT 7446-09-5, Sulfur dioxide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(SO3 formation from SO2)
IT 7446-11-9P, Sulfur oxide (SO3), preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(SO3 formation from SO2)
IT 7631-86-9P, Silica, preparation 7647-01-0P, Hydrogen chloride,
preparation 7664-39-3P, Hydrogen fluoride, preparation
7664-93-9P, Sulfuric acid, preparation 7697-37-2P, Nitric
acid, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(chem. generation of)
IT 7727-37-9, Nitrogen, reactions 7782-44-7, Oxygen,
reactions 10102-44-0, Nitrogen dioxide, reactions 12385-13-6,
Atomic hydrogen, reactions 17778-88-0, Atomic nitrogen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(formation of nitric oxide from)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

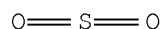
L25 ANSWER 6 OF 16 HCA COPYRIGHT 2008 ACS on STN
AN 128:259056 HCA Full-text
OREF 128:51259a,51262a
TI Environmentally safe process for the production of sulfuric acid
AU Kobayakov, A. I.; Kobyakov, A. A.
CS Ufa State Univ. Petroleum Engineering, Ufa, Russia
SO Theoretical Foundations of Chemical Engineering (Translation of
Teoreticheskie Osnovy Khimicheskoi Tekhnologii) (1998),
32(2), 182-189
CODEN: TFCEAU; ISSN: 0040-5795
PB MAIK Nauka/Interperiodica Publishing
DT Journal
LA English
AB A process flow sheet for the prodn. of sulfuric acid with waste gas
recycling is analyzed. Operations of the closed system are studied

by a computational expt. New methods of recovering sulfur dioxide from waste gases are described.

IT 7664-93-9P, Sulfuric acid, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(environmentally safe process for sulfuric acid prodn.)
RN 7664-93-9 HCA
CN Sulfuric acid (CA INDEX NAME)



IT 7446-09-5, Sulfur dioxide, reactions 7782-44-7,
Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(environmentally safe process for sulfuric acid prodn.)
RN 7446-09-5 HCA
CN Sulfur dioxide (CA INDEX NAME)



RN 7782-44-7 HCA
CN Oxygen (CA INDEX NAME)



CC 49-2 (Industrial Inorganic Chemicals)
Section cross-reference(s): 48, 59
IT Absorption
Environmental pollution
Oxidation
Waste gases
(environmentally safe process for sulfuric acid prodn.)
IT 7664-93-9P, Sulfuric acid, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(environmentally safe process for sulfuric acid prodn.)
IT 7446-09-5, Sulfur dioxide, reactions 7782-44-7,

Oxygen, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(environmentally safe process for sulfuric acid prodn.)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 7 OF 16 HCA COPYRIGHT 2008 ACS on STN

AN 128:3404 HCA Full-text

OREF 128:739a,742a

TI Kinetic modeling of the photooxidation of dimethyl disulfide in the liquid phase

AU Robert-Banchereau, Evelyne; Lacombe, Sylvie; Ollivier, Jean; Micheau, Jean Claude; Lavabre, Dominique

CS Laboratoire de Physico-Chimie Moléculaire, UMR 5624, University of PAU, Pau, F-64000, Fr.

SO International Journal of Chemical Kinetics (1997), 29(11), 825-834

CODEN: IJCKBO; ISSN: 0538-8066

PB Wiley

DT Journal

LA English

AB A reaction mechanism for the photooxidn. of di-Me disulfide (DMDS) in aq. acetonitrile has been established by kinetic modeling the UV absorbance vs. time curves under continuous irradiation. The model, built according to the known solution reactivity of oxysulfur radicals [1], consists of 22 steps involving 6 radical and 10 nonradical species. The first steps of the mechanism are the homolytic cleavage of the DMDS S-S bond with formation of methanethiyl radicals (CH₃S.) followed by addition of these radicals to mol. oxygen. There are photoequilibrium between thiyl (CH₃S.) sulfinyl (CH₃SO.) and sulfonyl (CH₃SO₂.) radicals and the corresponding mol. species (Me methanethiosulfinic acid CH₃S(O)SCH₃ or MMTSI, Me methanethiosulfonate CH₃S(O)₂SCH₃ or MMTS and methanesulfinic acid CH₃S(O)OH or MSIA) which appear as long lived intermediates. Reactions of sulfonyl radicals with oxygen lead to methanesulfonic acid (CH₃S(O)₂OH) or MSA. Cleavage of sulfonyl radicals gives SO₂ and CH₃. the parent compounds of sulfuric (H₂SO₄) and methanoic (HCOOH) acids. The predictive power of the model was tested at higher initial concentration of DMDS in anhydrous and aq. acetonitrile. In these conditions, the proposed mechanism gives a semiquantitative description of the course of the reaction and reproduces the kinetic behavior of the long lived intermediates.

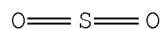
IT 7446-09-5, Sulfur dioxide, reactions

RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)

(kinetic modeling of photooxidn. of di-Me disulfide in the liq.
phase)

RN 7446-09-5 HCA

CN Sulfur dioxide (CA INDEX NAME)



IT 7782-44-7, Oxygen, reactions

RL: PEP (Physical, engineering or chemical process); PRP
(Properties); RCT (Reactant); PROC (Process); ~~RACT (Reactant or
reagent)~~

(kinetic modeling of photooxidn. of di-Me disulfide in the liq.
phase)

RN 7782-44-7 HCA

CN Oxygen (CA INDEX NAME)



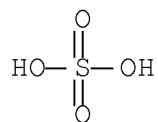
IT 7664-93-9F, Sulfuric acid, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)

(kinetic modeling of photooxidn. of di-Me disulfide in the liq.
phase)

RN 7664-93-9 HCA

CN Sulfuric acid (CA INDEX NAME)



CC 22-7 (Physical Organic Chemistry)

IT 50-00-0, Methanal, reactions 75-75-2, Methanesulfonic acid
2229-07-4, Methyl radical 2949-92-0 4853-80-9, Methylsulfonyl
radical 7175-75-9, Methylthio radical ~~7446-09-5~~, Sulfur
dioxide, reactions 13882-12-7, Methyl methanethiosulfinate
17696-73-0, Methanesulfinic acid 25683-64-1, Methylsulfinyl
radical

RL: FMU (Formation, unclassified); PEP (Physical, engineering or

chemical process); PRP (Properties); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); ~~RACT (Reactant or reagent)~~

(kinetic modeling of photooxidn. of di-Me disulfide in the liq. phase)

IT 624-92-0, Dimethyl disulfide 7782-44-7, Oxygen, reactions

RL: PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); ~~RACT (Reactant or reagent)~~

(kinetic modeling of photooxidn. of di-Me disulfide in the liq. phase)

IT 64-18-6P, Formic acid, preparation 7664-93-9P, Sulfuric acid, preparation

RL: SPN (Synthetic preparation); PREP (Preparation)

(kinetic modeling of photooxidn. of di-Me disulfide in the liq. phase)

RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L25 ANSWER 8 OF 16 HCA COPYRIGHT 2008 ACS on STN

AN 125:237192 HCA Full-text

OREF 125:44024a

TI Method of generating sulfuric acid mist and apparatus therefor

IN Inoe, Shigeru; Yamashita, Koichi; Ootsuki, Takashi

PA Toyota Motor Co Ltd, Japan; Besuto Sotsuki Kk

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 08178911	A	19960712	JP 1994-318396
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199412
21

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JP 3234424	B2	20011204
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PRAI JP 1994-318396 19941221 <--

AB The process comprises a mixing a SO2 gas and an O gas contg. moisture, heating the gas mixt., contacting an oxidn. catalyst to generate a predetd. concn.of sulfuric acid mist. Moisture is supplied by using a bubbler. The SO2 and O gas flows are controlled by mass flow controllers, resp. The process is used for checking accuracy of a SOSx analyzer.

IT 7446-11-9P, Sulfur trioxide, reactions

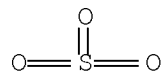
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP

(Preparation); RACT (Reactant or reagent)

(method of generating sulfuric acid mist and app. therefor)

RN 7446-11-9 HCA

CN Sulfur trioxide (CA INDEX NAME)



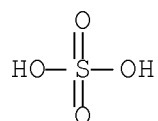
IT 7664-93-9P, Sulfuric acid, uses

RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(method of generating sulfuric acid mist and app. therefor)

RN 7664-93-9 HCA

CN Sulfuric acid (CA INDEX NAME)



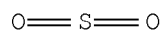
IT 7446-09-5, Sulfur dioxide, reactions 7782-44-7,
Oxygen, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(method of generating sulfuric acid mist and app. therefor)

RN 7446-09-5 HCA

CN Sulfur dioxide (CA INDEX NAME)



RN 7782-44-7 HCA

CN Oxygen (CA INDEX NAME)



IC ICM G01N031-00

ICS G01N001-00

CC 80-7 (Organic Analytical Chemistry)
 IT 7446-11-9P, Sulfur trioxide, reactions
 RL: PNU (Preparation, unclassified); RCT (Reactant); PREP
 (Preparation); RACT (Reactant or reagent)
 (method of generating sulfuric acid mist and app. therefor)
 IT 7664-93-9P, Sulfuric acid, uses
 RL: PNU (Preparation, unclassified); TEM (Technical or engineered
 material use); PREP (Preparation); USES (Uses)
 (method of generating sulfuric acid mist and app. therefor)
 IT 7446-09-5, Sulfur dioxide, reactions 7732-18-5, Water,
 reactions 7782-44-7, Oxygen, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (method of generating sulfuric acid mist and app. therefor)

L25 ANSWER 9 OF 16 HCA COPYRIGHT 2008 ACS on STN

AN 123:238719 HCA Full-text

OREF 123:42447a,42450a

TI Deactivation and compound formation in sulfuric acid catalysts and
 model systems

AU Eriksen, K. M.; Karydis, D. A.; Boghosian, S.; Fehrmann, R.

CS Chemistry Department A, The Technical University of Denmark, Lyngby,
 DK-2800, Den.

SO Journal of Catalysis (1995), 155(1), 32-42

CODEN: JCTLA5; ISSN: 0021-9517

PB Academic

DT Journal

LA English

AB The catalytic deactivation and the simultaneous formation of compds.
 in industrial sulfuric acid catalysts and their molten salt-gas model
 systems M2S2O7/V2O5-SO2/O2/SO3/N2 (M = Na, K, Cs) have been studied
 by combined activity measurements and in situ ESR spectroscopy at
 temps. up to 500°C. The applied gas compns. were unconverted, and 50
 and 90% preconverted std. feed gas contg. 10% SO2, 11% O2, and 79%
 N2. This covers the conditions of all beds in an industrial SO2
 converter, without interstage absorption of SO3. The temp. of
 deactivation was shown to decrease with increased degree of
 preconversion of the feed gas, increased mixing of the alkali
 promoters, and decreased vanadium content in the catalysts and model
 systems. The pptn. of V(III), V(IV), and mixed valence V(IV)-V(V)
 compds. was obsd. below the onset temp. of the catalyst deactivation.
 The salts have been isolated under operating conditions from model
 melts and identified by microscopy and spectroscopic methods. The
 V(IV) compds. were characterized by ESR spectroscopy and their temp.
 of decompn. was found to be in the range 450-500°C. Based on the
 characteristic ESR spectra, the V(IV) compds. causing the
 deactivation of working industrial catalysts could be identified in
 situ. Finally, it was found that the restoration of deactivated

catalysts requires heating to around 500°C, where the low-valence vanadium compds. decomp. and reoxidize to V(V).

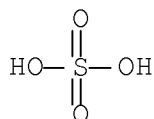
IT 7664-93-9P, Sulfuric acid, preparation

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(deactivation and compd. formation in sulfuric acid catalysts and model systems)

RN 7664-93-9 HCA

CN Sulfuric acid (CA INDEX NAME)



IT 7446-09-5, Sulfur dioxide, reactions 7446-11-9,

Sulfur trioxide, reactions 7782-44-7,

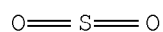
Oxygen, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(deactivation and compd. formation in sulfuric acid catalysts and model systems)

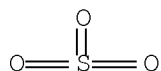
RN 7446-09-5 HCA

CN Sulfur dioxide (CA INDEX NAME)



RN 7446-11-9 HCA

CN Sulfur trioxide (CA INDEX NAME)



RN 7782-44-7 HCA

CN Oxygen (CA INDEX NAME)



CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
 Section cross-reference(s): 49
 IT 7664-93-9P, Sulfuric acid, preparation
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
 (deactivation and compd. formation in sulfuric acid catalysts and model systems)
 IT 7446-09-5, Sulfur dioxide, reactions 7446-11-9, Sulfur trioxide, reactions 7782-44-7, Oxygen, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (deactivation and compd. formation in sulfuric acid catalysts and model systems)

L25 ANSWER 10 OF 16 HCA COPYRIGHT 2008 ACS on STN

AN 123:87456 HCA Full-text

OREF 123:15565a,15568a

TI Process for recovering sulfuric acid from sulfate-containing used acid

IN Lailach, Guenter Dr

PA Bayer A.-G., Germany

SO Ger. Offen., 6 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	DE 4437550	A1	19950504	DE 1994-4437550	19941020
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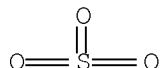
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PRAI DE 1994-4437550 A1 19941020 <--
 DE 1993-4337010 19931029 <--

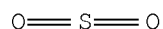
AB In this process, comprising increasing the H2SO4 concn. to 50-75% by evapn., crystg. and removing the sulfates, thermally decomp. the moist sulfates oxides and SO2-contg. gases, cooling the SO2-contg. gases and oxides to 270-320°, dedusting the SO2-contg. hot gases, scrubbing and cooling the SO2-contg. dust-free gases to 25-40°, sepg. mist from the gases, drying the gases with 95-98% H2SO4, converting the SO2-contg. gases with O to SO3, and absorbing the SO3 to obtain H2SO4, the dedusted SO2- and 7-20-vol.% water vapor-contg. hot gases are scrubbed and cooled with 60-80-wt.% H2SO4 of 120-160° that is recirculated through a heat exchanger, and cooled to 25-40° by direct

or indirect heat exchange with a cooling liq., such that the heat from the SO₂-contg. hot gases is transferred to the sulfate-contg. used acid.

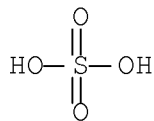
IT 7446-11-9P, Sulfur trioxide, preparation
RL: PNU (Preparation, unclassified); PREP (Preparation)
(sulfuric acid recovery from sulfate-contg. used acid)
RN 7446-11-9 HCA
CN Sulfur trioxide (CA INDEX NAME)



IT 7446-09-5P, Sulfur dioxide, preparation
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP
(Preparation); RACT (Reactant or reagent)
(sulfuric acid recovery from sulfate-contg. used acid)
RN 7446-09-5 HCA
CN Sulfur dioxide (CA INDEX NAME)



IT 7664-93-9P, Sulfuric acid, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(sulfuric acid recovery from sulfate-contg. used acid)
RN 7664-93-9 HCA
CN Sulfuric acid (CA INDEX NAME)



IT 7782-44-7, Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(sulfuric acid recovery from sulfate-contg. used acid)
RN 7782-44-7 HCA
CN Oxygen (CA INDEX NAME)

O==O

IC ICM C01B017-90
ICS C01B017-88; C01B017-76
CC 49-1 (Industrial Inorganic Chemicals)
IT 7446-11-9P, Sulfur trioxide, preparation
RL: PNU (Preparation, unclassified); PREP (Preparation)
(sulfuric acid recovery from sulfate-contg. used acid)
IT 7446-09-5P, Sulfur dioxide, preparation
RL: PNU (Preparation, unclassified); RCT (Reactant); PREP
(Preparation); RACT (Reactant or reagent)
(sulfuric acid recovery from sulfate-contg. used acid)
IT 7664-93-9P, Sulfuric acid, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(sulfuric acid recovery from sulfate-contg. used acid)
IT 7782-44-7, Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(sulfuric acid recovery from sulfate-contg. used acid)

L25 ANSWER 11 OF 16 HCA COPYRIGHT 2008 ACS on STN
AN 122:191601 HCA Full-text
OREF 122:35029a,35032a
TI Relation between conversion efficiencies and oxygen/sulfur dioxide
ratios in 3 + 2-type two-fold conversion
AU Zhang, Chaolin
CS Nanhua (Group) Co. Res. Inst., Peop. Rep. China
SO Liusuan Gongye (1994), (2), 10-16, 60
CODEN: LIGOEH
PB Liusuan Gongye Bianjibu
DT Journal
LA Chinese
AB A math. model for conversion efficiencies and O₂/SO₂ ratios of 3 + 2
interpass absorption process was established on the basis of tests in
a 20 k tons/yr H₂SO₄ pilot plant. The regression and residual error
anal. showed that the calcd. results were in good agreement with
exptl. data. In 3 + 2 interpass absorption configuration, an overall
conversion efficiency of ≥99.7% can be reached, provided that O₂/SO₂
ratio is ≥0.766 no matter what kinds of pyrite supplies are used. In
other words, H₂SO₄ output can be raised with the same conversion
efficiency by roasting high-grade pyrite which contains fewer O₂-
consuming impurities to increase inlet SO₂ concn. when O₂/SO₂ ratio
remains unchanged. The test showed that the overall conversion
efficiency is also related to process arrangement. At the same

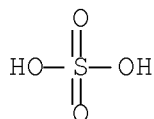
O₂/SO₂ ratio, the conversion efficiency order is 3 + 2 > 3 + 1 > 2 + 2. At less O₂/SO₂ ratio, the difference is more evident.

IT 7664-93-9P, Sulfuric acid, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)
(relation between conversion efficiencies and oxygen/sulfur dioxide ratios in 3 + 2-type two-fold conversion)

RN 7664-93-9 HCA

CN Sulfuric acid (CA INDEX NAME)

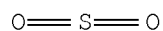


IT 7446-09-5, Sulfur dioxide, reactions 7782-44-7,
Oxygen, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(relation between conversion efficiencies and oxygen/sulfur dioxide ratios in 3 + 2-type two-fold conversion)

RN 7446-09-5 HCA

CN Sulfur dioxide (CA INDEX NAME)



RN 7782-44-7 HCA

CN Oxygen (CA INDEX NAME)



CC 49-2 (Industrial Inorganic Chemicals)

IT 7664-93-9P, Sulfuric acid, preparation

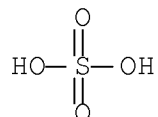
RL: IMF (Industrial manufacture); PREP (Preparation)
(relation between conversion efficiencies and oxygen/sulfur dioxide ratios in 3 + 2-type two-fold conversion)

IT 7446-09-5, Sulfur dioxide, reactions 7782-44-7,
Oxygen, reactions

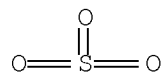
RL: RCT (Reactant); RACT (Reactant or reagent)
(relation between conversion efficiencies and oxygen/sulfur

dioxide ratios in 3 + 2-type two-fold conversion)

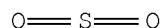
L25 ANSWER 12 OF 16 HCA COPYRIGHT 2008 ACS on STN
AN 108:228094 HCA Full-text
OREF 108:37321a,37324a
TI Corrosion by photochemical reaction due to synchrotron radiation in
TRISTAN accumulation ring
AU Momose, Takashi; Ishimaru, Hajime
CS Natl. Lab. for High Energy Phys., Tsukuba, Japan
SO Shinku (~~1988~~), 31(1), 18-20
CODEN: SHINAM; ISSN: 0559-8516
DT Journal
LA Japanese
AB Corrosion of Al alloy in the TRISTAN accumulation ring (TAR) is
caused by HNO₃ and H₂SO₄ formed by the synchrotron radiation irradiation
of the N, O, SO₂ in air and resulted in the formation of NO, NO₂, and
SO₃ which then reacted with moisture to form HNO₃ and H₂SO₄. The
humidity in the TAR was 60%. Controlling the humidity might be a way
of controlling corrosion.
IT ~~7664-93-9P~~, preparation
RL: PREP (Preparation)
(formation and corrosion of aluminum alloy by, in accelerator
accumulation ring in presence of synchrotron radiation)
RN 7664-93-9 HCA
CN Sulfuric acid (CA INDEX NAME)



IT ~~7446-11-9P~~, preparation
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in accelerator accumulation ring, aluminum alloy
corrosion in relation to)
RN 7446-11-9 HCA
CN Sulfur trioxide (CA INDEX NAME)



IT 7446-09-5, reactions 7782-44-7, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(radiolysis of, by synchrotron radiation in accelerator
accumulation ring, aluminum alloy corrosion in relation to)
RN 7446-09-5 HCA
CN Sulfur dioxide (CA INDEX NAME)



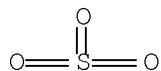
RN 7782-44-7 HCA
CN Oxygen (CA INDEX NAME)



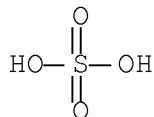
CC 71-1 (Nuclear Technology)
Section cross-reference(s): 74
IT 7664-93-9P, preparation 7697-37-2P, preparation
RL: PREP (Preparation)
(formation and corrosion of aluminum alloy by, in accelerator
accumulation ring in presence of synchrotron radiation)
IT 7446-11-9P, preparation 10102-43-9P, preparation
10102-44-0P, preparation
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in accelerator accumulation ring, aluminum alloy
corrosion in relation to)
IT 7446-09-5, reactions 7727-37-9, reactions
7782-44-7, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(radiolysis of, by synchrotron radiation in accelerator
accumulation ring, aluminum alloy corrosion in relation to)

L25 ANSWER 13 OF 16 HCA COPYRIGHT 2008 ACS on STN
AN 105:216541 HCA Full-text
OREF 105:34773a,34776a
TI Conversion of sulfur dioxide to **sulfur trioxide**
facilitated by in situ UV photolysis of formaldehyde and sulfur
dioxide in an oxygen matrix at 12 K
AU Green, Martina; Lee, Edward K. C.
CS Dep. Chem., Univ. California, Irvine, CA, 92717, USA
SO Journal of Physical Chemistry (1986), 90(24), 6470-5
CODEN: JPCHAX; ISSN: 0022-3654

DT Journal
 LA English
 AB The photooxidn. product distributions from photolyses of H₂CO and H₂CO.SO₂ mol. complexes in O matrixes at $\lambda = 270-420$ nm are compared. Photodissocn. of H₂CO produced R₂O species (HO₂ and HC(O)OO radicals) which then efficiently oxidized SO₂ to SO₃ (and H₂SO₄). This process occurred with an efficiency of .apprx.0.7 \pm 0.3 per H₂CO.SO₂ mol. complex photodissocd. Various photooxidn. mechanisms are considered. Implications of the low-temp./matrix photooxidn. results on atm. photooxidn. of SO₂ by R₂O species are discussed.
 IT 7446-11-9P, preparation 7664-93-9P, preparation
 RL: FORM (Formation, nonpreparative); PREP (Preparation)
 (formation of, in photolysis of oxygen matrix contg. sulfur dioxide and formaldehyde)
 RN 7446-11-9 HCA
 CN Sulfur trioxide (CA INDEX NAME)



RN 7664-93-9 HCA
 CN Sulfuric acid (CA INDEX NAME)

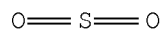


IT 7782-44-7, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (photolysis of matrix from, contg. sulfur dioxide and formaldehyde)
 RN 7782-44-7 HCA
 CN Oxygen (CA INDEX NAME)



IT 7446-09-5, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(photolysis of, in oxygen matrix contg. formaldehyde)
RN 7446-09-5 HCA
CN Sulfur dioxide (CA INDEX NAME)



CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and
Other Reprographic Processes)
IT 3170-83-0P 7446-11-9P, preparation 7664-93-9P,
preparation 56240-83-6P
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in photolysis of oxygen matrix contg. sulfur
dioxide and formaldehyde)
IT 7782-44-7, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photolysis of matrix from, contg. sulfur dioxide and
formaldehyde)
IT 7446-09-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photolysis of, in oxygen matrix contg. formaldehyde)

L25 ANSWER 14 OF 16 HCA COPYRIGHT 2008 ACS on STN
AN 89:8407 HCA Full-text
OREF 89:1383a,1386a
TI Sulfuric acid manufacture using dispersed asbestos
IN Iida, Akira
PA Taniguchi, Akira, Japan
SO Jpn. Tokkyo Koho, 8 pp.
CODEN: JAXXAD

DT Patent
LA Japanese

FAN.CNT 1

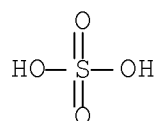
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 52030160	B	19770805	JP 1973-68298	197306 19
				<--	
	JP 50018385	A	19750226		
PRAI	JP 1973-68298		19730619	<--	

AB H2SO4 in manufd. by bubbling a SO2-contg. gas into an aq. suspension of asbestos (contg. large amts. of adsorbed O), heating the suspension to 70-100°, then filtering off the asbestos.

IT 7664-93-9P, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manuf. of, sulfur dioxide oxidn. by oxygen absorbed on asbestos in)

RN 7664-93-9 HCA

CN Sulfuric acid (CA INDEX NAME)



IT 7782-44-7, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxidn. by asbestos-absorbed, of sulfur dioxide)

RN 7782-44-7 HCA

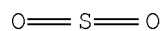
CN Oxygen (CA INDEX NAME)



IT 7446-09-5, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxidn. of, by oxygen absorbed on asbestos)

RN 7446-09-5 HCA

CN Sulfur dioxide (CA INDEX NAME)



IC C01B017-74

CC 49-2 (Industrial Inorganic Chemicals)

IT Asbestos
 RL: USES (Uses)
 (absorption by, of oxygen for sulfur dioxide oxidn.)

IT 7664-93-9P, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)

(manuf. of, sulfur dioxide oxidn. by oxygen **absorbed** on asbestos in)

IT 7782-44-7, reactions
 RL: RCT (Reactant); **R**ACT (Reactant or reagent)
 (oxidn. by asbestos-**absorbed**, of sulfur dioxide)

IT 7446-09-5, reactions
 RL: RCT (Reactant); **R**ACT (Reactant or reagent)
 (oxidn. of, by oxygen **absorbed** on asbestos)

L25 ANSWER 15 OF 16 HCA COPYRIGHT 2008 ACS on STN

AN 86:173661 HCA Full-text

OREF 86:27283a,27286a

TI Preparation of sulfuric acid from 18-22% sulfur dioxide

AU Epifanov, V. S.; Khryashchev, S. V.; Terent'ev, D. F.; Borisov, V. M.; Popov, A. E.; Safonov, A. V.

CS USSR

SO Khimicheskaya Promyshlennost (Moscow, Russian Federation) (1977), (2), 122-4
 CODEN: KPRMAW; ISSN: 0023-110X

DT Journal

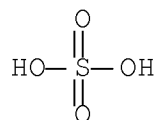
LA Russian

AB The use of air with supplemental O in the manuf. of H2SO4 from gases contg. 18-22% SO2 by the double contact-double **absorption** method. With supplemental O the energy consumption and equipment required were less than if no supplemental O was added. Also, as the SO2 concn. increased these values decreased.

IT 7664-93-9P, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manuf. of, use of air plus oxygen in, energy consumption and equipment requirement redn. in)

RN 7664-93-9 HCA

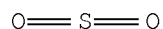
CN Sulfuric acid (CA INDEX NAME)



IT 7446-09-5, reactions
 RL: RCT (Reactant); **R**ACT (Reactant or reagent)
 (oxidn. of, use of air plus oxygen in, energy consumption and equipment requirements decrease by)

RN 7446-09-5 HCA

CN Sulfur dioxide (CA INDEX NAME)



IT 7782-44-7, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of air and, with sulfur dioxide, energy consumption and
equipment requirement redn. by)
RN 7782-44-7 HCA
CN Oxygen (CA INDEX NAME)



CC 49-2 (Industrial Inorganic Chemicals)
IT 7664-93-9P, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, use of air plus oxygen in, energy consumption and
equipment requirement redn. in)
IT 7446-09-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. of, use of air plus oxygen in, energy consumption and
equipment requirements decrease by)
IT 7782-44-7, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of air and, with sulfur dioxide, energy consumption and
equipment requirement redn. by)

L25 ANSWER 16 OF 16 HCA COPYRIGHT 2008 ACS on STN
AN 84:22509 HCA Full-text
OREF 84:3683a,3686a
TI Kinetics of particle growth. VI. Sulfuric acid aerosol from the
photooxidation of sulfur dioxide in moist oxygen-nitrogen mixtures
AU Smith, Roland; De Pena, R. G.; Heicklen, Julian
CS Cent. Air Environ. Stud., Pennsylvania State Univ., University Park,
PA, USA
SO Journal of Colloid and Interface Science (1975), 53(2),
202-13
CODEN: JCISA5; ISSN: 0021-9797
DT Journal
LA English
AB SO2 was photolyzed by fluorescent light at 29° in moist O-N mixts. of
1 atm pressure. The particle no. d. of the H2SO4 aerosol product was

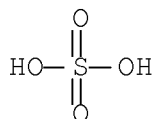
monitored as a function of irradiation time. After 1-min induction period, particles were produced and they increased to a maximum value, N_{max} , of $\approx 0.6 \times 10^5$ particles/cm³ at ≈ 10 min irradiation time for an SO₂ photoremoval constant of 3×10^{-6} min⁻¹. The results were independent of the SO₂ pressure or the H₂O pressure, but N_{max} was smaller at reduced light intensity. The critical concentration of H₂SO₄ vapor needed to initiate particle growth was $\approx 10^9$ molecules/cm³ (2×10^{-7} torr). The nucleation mechanism is: $SO_2 + h\nu \rightarrow SO_2^*$; $SO_2^* + O_2 \rightarrow SO_4$; $SO_4 + SO_2 \rightarrow 2SO_3$ (4); $SO_3 + H_2O \rightarrow H_2SO_4$ (3); $qSO_4 \rightarrow (SO_4)_q$ (5); where SO_2^* is the electronically excited SO₂ molecule that is the precursor to SO_4 . Reaction 5 is the nucleating reaction, and $(SO_4)_q$ is the nucleating species. Reaction 5 is slow compared to reaction 4, and the steady-state approximation leads to the law for the nucleation rate, $R_{nucl} = k_5(k_1/k_4)q$, where k_1 is the photoremoval rate of SO₂.

IT 7664-93-9P, properties

RL: PRP (Properties); PREP (Preparation)
(aerosols, kinetics of growth of, with formation by photooxidation of sulfur dioxide)

RN 7664-93-9 HCA

CN Sulfuric acid (CA INDEX NAME)

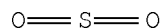


IT 7446-09-5, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(photochemical oxidation of, in moist oxygen-nitrogen mixtures with formation of sulfuric acid aerosols)

RN 7446-09-5 HCA

CN Sulfur dioxide (CA INDEX NAME)



IT 7782-44-7, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)
(photooxidation of sulfur dioxide in moist nitrogen and)

RN 7782-44-7 HCA

CN Oxygen (CA INDEX NAME)

O==O

CC 66-1 (Surface Chemistry and Colloids)
Section cross-reference(s): 74, 53
IT ~~7664-93-9F~~, properties
RL: PRP (Properties); PREP (Preparation)
(aerosols, kinetics of growth of, with formation by photooxidn.
of sulfur dioxide)
IT ~~7446-09-5~~, reactions
RL: RCT (Reactant); ~~RACT~~ (Reactant or reagent)
(photochem. oxidn. of, in moist oxygen-nitrogen mixts. with
formation of sulfuric acid aerosols)
IT ~~7782-44-7~~, reactions
RL: RCT (Reactant); ~~RACT~~ (Reactant or reagent)
(photooxidn. of sulfur dioxide in moist nitrogen and)

=> D L26 1-7 BIB ABS HITSTR HITIND

L26 ANSWER 1 OF 7 HCA COPYRIGHT 2008 ACS on STN
AN 133:60918 HCA Full-text
TI Waste gas analysis system and manufacture of sulfuric acid from
smelting waste gas using same.
IN Noda, Tsutomu; Kondo, Etsuo; Shinohara, Masahiko; Sato, Hiroshi
PA Sumitomo Metal Mining Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

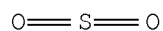
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	JP 2000191306	A	20000711	JP 1998-369345	199812 25

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PRAI JP 1998-369345 19981225 <--
AB The title anal. system comprises an introduction piping connected
with the outlet of a booster blower, a gas purifn. device, a reducing
valve, a continuous automatic analyzer, and a discharge piping
connected to the inlet of a drying tower; the introduction piping and
the discharge piping are connected with the gas purifn. device resp.;

the gas purifn. device and the continuous automatic analyzer are connected via the reducing valve. The sulfuric acid manuf. process includes using the above stated anal. system to find SO₂ concn. and O₂ concn. in waste gas; if necessary, diln. air is added into waste gas for properly adjusting the ratio of SO₂ concn. and O₂ concn. in waste gas based on the anal. result.

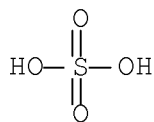
IT 7446-09-5, Sulfur dioxide, reactions 7782-44-7,
Oxygen, reactions
RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study);
RACT (Reactant or reagent)
(waste gas anal. system and manuf. of sulfuric acid from smelting
waste gas using same)
RN 7446-09-5 HCA
CN Sulfur dioxide (CA INDEX NAME)



RN 7782-44-7 HCA
CN Oxygen (CA INDEX NAME)



IT 7664-93-9P, Sulfuric acid, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(waste gas anal. system and manuf. of sulfuric acid from smelting
waste gas using same)
RN 7664-93-9 HCA
CN Sulfuric acid (CA INDEX NAME)



IC ICM C01B017-765
ICS C01B017-74; G01N001-22; G01N031-00; G01N031-22
CC 49-3 (Industrial Inorganic Chemicals)
Section cross-reference(s): 55, 56, 59, 79

IT 7446-09-5, Sulfur dioxide, reactions 7782-44-7,
 Oxygen, reactions
 RL: ANT (Analyte); RCT (Reactant); ANST (Analytical study);
 RACT (Reactant or reagent)
 (waste gas anal. system and manuf. of sulfuric acid from smelting
 waste gas using same)

IT 7664-93-9P, Sulfuric acid, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (waste gas anal. system and manuf. of sulfuric acid from smelting
 waste gas using same)

L26 ANSWER 2 OF 7 HCA COPYRIGHT 2008 ACS on STN

AN 132:224458 HCA Full-text

TI Sulfuric acid conversion process

IN Hakka, Leo E.; Parisi, Paul J.

PA Cansolv Technologies Inc., Can.

SO PCT Int. Appl., 34 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI WO 2000014011	A1	20000316	WO 1999-CA796	199909 02
<--				
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2246474	A1	20000303	CA 1998-2246474	199809 03
<--				
AU 9954040	A1	20000327	AU 1999-54040	199909 02
<--				
PRAI CA 1998-2246474	A	19980903	<--	
US 1998-148852	A1	19980904	<--	

WO 1999-CA796 W 19990902 <--

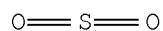
AB A process for prodn. of H₂SO₄ comprises (1) providing a H₂SO₄ precursor stream comprising O₂ and SO₂; (2) feeding the H₂SO₄ stream to a H₂SO₄ converter to produce a H₂SO₄ stream and a gaseous stream contg. unreacted SO₂; and (3) subjecting the gaseous stream to a regenerable SO₂ recovery process to obtain a SO₂-rich stream and a SO₂-lean stream.

IT 7446-09-5, Sulfur dioxide, reactions 7782-44-7,
Oxygen, reactions

RL: PEP (Physical, engineering or chemical process); RCT (Reactant);
PROC (Process); RACT (Reactant or reagent)
(in sulfuric acid manuf.)

RN 7446-09-5 HCA

CN Sulfur dioxide (CA INDEX NAME)



RN 7782-44-7 HCA

CN Oxygen (CA INDEX NAME)

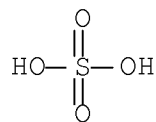


IT 7664-93-9P, Sulfuric acid, preparation

RL: IMF (Industrial manufacture); PEP (Physical, engineering or
chemical process); PREP (Preparation); PROC (Process)
(manuf. of)

RN 7664-93-9 HCA

CN Sulfuric acid (CA INDEX NAME)



IC ICM C01B017-76

CC 49-2 (Industrial Inorganic Chemicals)

IT 7446-09-5, Sulfur dioxide, reactions 7782-44-7,
Oxygen, reactions

RL: PEP (Physical, engineering or chemical process); RCT (Reactant);
PROC (Process); ~~RACT~~ (Reactant or reagent)
(in sulfuric acid manuf.)

IT ~~7664-93-9P~~, Sulfuric acid, preparation

RL: IMF (Industrial manufacture); PEP (Physical, engineering or
chemical process); PREP (Preparation); PROC (Process)
(manuf. of)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 3 OF 7 HCA COPYRIGHT 2008 ACS on STN

AN 128:283877 HCA Full-text

OREF 128:56179a,56182a

TI Photochemical process for the manufacture of methanesulfonic acid
from mixtures of acetic acid and sulfur dioxide and oxygen

IN Eiermann, Matthias; Papkalla, Thomas

PA BASF Aktiengesellschaft, Germany; Eiermann, Matthias; Papkalla,
Thomas

SO PCT Int. Appl., 15 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	
PI	WO 9815527	A1	19980416	WO 1997-EP5536	199710 08
				<--	
	W: CA, JP, MX, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
DE	19641483	A1	19980416	DE 1996-19641483	199610 09
				<--	
EP	932599	A1	19990804	EP 1997-911197	199710 08
				<--	
EP	932599	B1	20010822		
	R: BE, DE, FR, GB, IT				
JP	2001501942	T	20010213	JP 1998-517181	199710 08
				<--	

US 6207025

B1

20010327

US 1999-269759

199904
08

<--

PRAI DE 1996-19641483 A 19961009 <--

WO 1997-EP5536 W 19971008 <--

AB Methanesulfonic acid is prepd. in high yield and selectivity by UV
irradn. of a mixt. contg. acetic acid, sulfur dioxide, and oxygen. An
accumulated irradn. d. of 240-320 nm light on the light-entrance
surface of the reaction mixt. of 0.05-50 nmole-quantum/cm²-h is used.

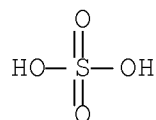
IT ~~7664-93-9P~~, Sulfuric acid, preparation

RL: BYP (Byproduct); PREP (Preparation)

(photochem. process for the manuf. of methanesulfonic acid from
mixts. of acetic acid and sulfur dioxide and oxygen)

RN 7664-93-9 HCA

CN Sulfuric acid (CA INDEX NAME)



IT ~~7446-09-5~~, Sulfur dioxide, reactions ~~7782-44-7~~,

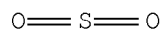
Oxygen, reactions

RL: RCT (Reactant); ~~RACT (Reactant or reagent)~~

(photochem. process for the manuf. of methanesulfonic acid from
mixts. of acetic acid and sulfur dioxide and oxygen)

RN 7446-09-5 HCA

CN Sulfur dioxide (CA INDEX NAME)



RN 7782-44-7 HCA

CN Oxygen (CA INDEX NAME)



IC ICM C07C303-14

ICS C07C309-04
 CC 45-4 (Industrial Organic Chemicals, Leather, Fats, and Waxes)
 Section cross-reference(s): 23, 48, 74
 IT ~~7664-93-9P~~, Sulfuric acid, preparation
 RL: BYP (Byproduct); PREP (Preparation)
 (photochem. process for the manuf. of methanesulfonic acid from
 mixts. of acetic acid and sulfur dioxide and oxygen)
 IT 64-19-7, Acetic acid, reactions ~~7446-09-5~~, Sulfur dioxide,
 reactions ~~7782-44-7~~, Oxygen, reactions
 RL: RCT (Reactant); ~~RACT~~ (Reactant or reagent)
 (photochem. process for the manuf. of methanesulfonic acid from
 mixts. of acetic acid and sulfur dioxide and oxygen)
 RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 4 OF 7 HCA COPYRIGHT 2008 ACS on STN

AN 112:182365 HCA Full-text

OREF 112:30813a,30816a

TI Method and apparatus for the desulfurization of sulfur
 dioxide-containing gases under formation of sulfuric acid

IN Lailach, Guenter; Gerken, Rudolf

PA Bayer A.-G., Germany

SO Ger. Offen., 4 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	DE 3826372	A1	19900222	DE 1988-3826372	198808 03
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	EP 356693	A2	19900307	EP 1989-113419	198907 21
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EP 356693 A3 19900321

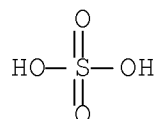
R: BE, DE, ES, FR, GB, IT, NL

PRAI DE 1988-3826372 A 19880803 <--

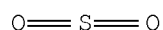
AB In the title process, comprising reacting the SO₂ with O and water on
 moistened, activated C at 40-90°, 7-100 g H₂O are nebulized per 1 g
 SO₂ in the SO₂-contg. gases having a H₂O-vapor satn. of ≥90%. The
 app. consists of a vertical multicompartiment reactor having circular
 or rectangular cross-sectional area, in which the activated C beds
 are supported by gas-permeable supports, and in which the reactor

wall above the beds contain openings for the introduction of the SO₂- and water droplet-contg. gas, and openings under the beds for the removal of the desulfurized gas and the H₂SO₄. This method and app. give improved utilization of the reactor vol. at decreased free space.

IT 7664-93-9P, Sulfuric acid, preparation
RL: IMF (Industrial manufacture); PREP (Preparation)
(manuf. of, from sulfur dioxide in flue gases, by oxidn. on
moistened activated carbon, app. for)
RN 7664-93-9 HCA
CN Sulfuric acid (CA INDEX NAME)



IT 7446-09-5, Sulfur dioxide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. of, in flue gases, on moistened activated carbon, for
sulfuric acid, app. for)
RN 7446-09-5 HCA
CN Sulfur dioxide (CA INDEX NAME)



IT 7782-44-7, Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. with, of sulfur dioxide, in flue gases, on moistened
activated carbon, for sulfuric acid, app. for)
RN 7782-44-7 HCA
CN Oxygen (CA INDEX NAME)



IC ICM B01D053-34
ICS B01D053-14; C01B017-69
CC 49-2 (Industrial Inorganic Chemicals)

IT 7664-93-9F, Sulfuric acid, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manuf. of, from sulfur dioxide in flue gases, by oxidn. on
 moistened activated carbon, app. for)

IT 7446-09-5, Sulfur dioxide, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxidn. of, in flue gases, on moistened activated carbon, for
 sulfuric acid, app. for)

IT 7782-44-7, Oxygen, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxidn. with, of sulfur dioxide, in flue gases, on moistened
 activated carbon, for sulfuric acid, app. for)

L26 ANSWER 5 OF 7 HCA COPYRIGHT 2008 ACS on STN

AN 111:236065 HCA Full-text

OREF 111:39187a,39190a

TI Apparatus for the manufacture of sulfuric acid by the contact
 process

IN Ukawa, Naohiko; Nakamura, Tsumoru; Kotake, Shinichiro

PA Mitsubishi Heavy Industries, Ltd., Japan

SO Ger. Offen., 6 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

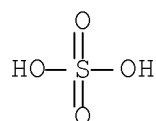
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PI	DE 3911889	A1	19891019	DE 1989-3911889	198904 07
				<--	
	JP 01257110	A	19891013	JP 1988-84105	198804 07
				<--	
	JP 07108767	B	19951122		
	AU 8932428	A	19891012	AU 1989-32428	198904 04
				<--	
	AU 610374	B2	19910516		
	CA 1332783	C	19941101	CA 1989-595960	198904 06
				<--	
PRAI	JP 1988-84105	A	19880407	<--	

AB The title app. comprises a piping system for supplying the SO₂ and O₂, contg. multiple honeycomb-type grids of catalytic material having equiv. diam. 3.0-15.0 mm and open vol. 30-70%, sepd. by heat exchangers. The app. has low pressure drop.

IT ~~7664-93-9P~~, Sulfuric acid, preparation
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (manuf. of, app. for, with honeycomb-type catalyst grids)

RN 7664-93-9 HCA

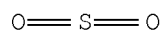
CN Sulfuric acid (CA INDEX NAME)



IT ~~7446-09-5~~, Sulfur dioxide, reactions
 RL: RCT (Reactant); ~~R~~ACT (Reactant or reagent)
 (reaction of, with oxygen, honeycomb-type catalyst grids for, in sulfuric acid manuf.)

RN 7446-09-5 HCA

CN Sulfur dioxide (CA INDEX NAME)



IT ~~7782-44-7~~, Oxygen, reactions
 RL: RCT (Reactant); ~~R~~ACT (Reactant or reagent)
 (reaction of, with sulfur dioxide, honeycomb-type catalyst grids for, in sulfuric acid manuf.)

RN 7782-44-7 HCA

CN Oxygen (CA INDEX NAME)



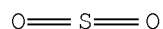
IC ICM C01B017-76
 ICS B01J035-04

CC 49-2 (Industrial Inorganic Chemicals)
 Section cross-reference(s): 47

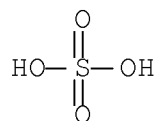
IT ~~7664-93-9P~~, Sulfuric acid, preparation

RL: IMF (Industrial manufacture); PREP (Preparation)
 (manuf. of, app. for, with honeycomb-type catalyst grids)
 IT 7446-09-5, Sulfur dioxide, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with oxygen, honeycomb-type catalyst grids for, in
 sulfuric acid manuf.)
 IT 7782-44-7, Oxygen, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reaction of, with sulfur dioxide, honeycomb-type catalyst grids
 for, in sulfuric acid manuf.)

L26 ANSWER 6 OF 7 HCA COPYRIGHT 2008 ACS on STN
 AN 105:234486 HCA Full-text
 OREF 105:37745a,37748a
 TI The study of the sulfur dioxide conversion for the sulfuric
 acid-hydrogen production process
 AU Stankovic, Z. D.
 CS Fac. Eng. Bor, Univ. Beograd, Bor, 19210, Yugoslavia
 SO Advances in Hydrogen Energy (1986), 5(Hydrogen Energy
 Prog. 6, Vol. 1), 394-405
 CODEN: AHENDB; ISSN: 0276-2412
 DT Journal
 LA English
 AB The results of the depolarization effect of the anodic oxidn. of SO₂
 by O generated at packed bed electrodes on the process of
 electrolysis of H₂O for prodn. of H and H₂SO₄ are presented. By
 using potential-time and current-potential measurements, the extent
 of the depolarization effect of SO₂ on the anodic potential of the
 H₂O electrolyzer was obtained.
 IT 7446-09-5, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxidn. of, electrochem., in sulfuric acid-hydrogen prodn.
 process)
 RN 7446-09-5 HCA
 CN Sulfur dioxide (CA INDEX NAME)



IT 7664-93-9P, preparation
 RL: PREP (Preparation)
 (prodn. of, by sulfur dioxide conversion in hydrogen prodn.
 process)
 RN 7664-93-9 HCA
 CN Sulfuric acid (CA INDEX NAME)



IT 7782-44-7, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (sulfur dioxide anodic oxidn. by, in sulfuric acid-hydrogen
 prodn. process)
 RN 7782-44-7 HCA
 CN Oxygen (CA INDEX NAME)

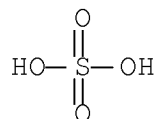


CC 72-9 (Electrochemistry)
 IT 7446-09-5, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (oxidn. of, electrochem., in sulfuric acid-hydrogen prodn.
 process)
 IT 7664-93-9P, preparation
 RL: PREP (Preparation)
 (prodn. of, by sulfur dioxide conversion in hydrogen prodn.
 process)
 IT 7782-44-7, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (sulfur dioxide anodic oxidn. by, in sulfuric acid-hydrogen
 prodn. process)

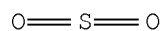
L26 ANSWER 7 OF 7 HCA COPYRIGHT 2008 ACS on STN
 AN 95:105177 HCA Full-text
 OREF 95:17533a,17534a
 TI Electrogenative oxidation of sulfur dioxide
 AU Spotnitz, R. M.; Loeffler, C. E., II; Langer, S. H.
 CS Dep. Chem. Eng., Univ. Wisconsin-Madison, Madison, WI, 53706, USA
 SO Journal of Applied Electrochemistry (1981), 11(4), 403-5
 CODEN: JAE LBJ; ISSN: 0021-891X
 DT Journal
 LA English
 AB Possible applications of electrosynthesis of H₂SO₄ from SO₂ and O are
 discussed, and preliminary results for a lab. scale reactor are

presented. The use of active, fuel-cell electrodes enables relatively large current densities to be obtained at low cell voltages.

IT 7664-93-9P, preparation
RL: PREP (Preparation)
(electrosynthesis of, from sulfur dioxide and oxygen)
RN 7664-93-9 HCA
CN Sulfuric acid (CA INDEX NAME)



IT 7446-09-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. of, electrogenerative)
RN 7446-09-5 HCA
CN Sulfur dioxide (CA INDEX NAME)



IT 7782-44-7, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(sulfuric acid electrosynthesis from sulfur dioxide and)
RN 7782-44-7 HCA
CN Oxygen (CA INDEX NAME)



CC 72-2 (Electrochemistry)
Section cross-reference(s): 49
IT 7664-93-9P, preparation
RL: PREP (Preparation)
(electrosynthesis of, from sulfur dioxide and oxygen)
IT 7446-09-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(oxidn. of, electrogenerative)

IT 7782-44-7, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

(sulfuric acid electrosynthesis from sulfur dioxide and)